

**IN THE UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF TEXAS  
WACO DIVISION**

MASTEROBJECTS, INC.,

*Plaintiff,*

V.

FACEBOOK, INC.

*Defendant.*

Civil Action No. 6:20-cv-00087-ADA

## JURY TRIAL DEMANDED

**PLAINTIFF MASTEROBJECTS, INC'S OPENING CLAIM CONSTRUCTION BREIF**

## TABLE OF CONTENTS

	<u>Page</u>
I. INTRODUCTION AND SUMMARY .....	1
II. STATEMENT OF THE FACTS AND PRIOR PROCEEDINGS .....	3
A. Mark Smit and His Invention.....	3
B. MasterObjects’ Patents .....	4
C. MasterObjects Specification .....	5
D. Query Message: The Prior Claims Orders and PTAB Proceeding .....	8
1. <i>eBay</i> .....	9
2. <i>Google</i> .....	10
3. <i>Yahoo!</i> .....	11
4. <i>The ’024 Patent and the PTAB Proceeding</i> .....	12
E. Asynchronous Communication: The Prior Claims Orders and PTAB Proceeding .....	13
1. <i>eBay</i> .....	13
2. <i>Yahoo!</i> .....	15
3. <i>Google</i> .....	16
4. <i>PTAB</i> .....	16
III. THE QUERY MESSAGE TERMS DO NOT REQUIRE SENDING “JUST-THE-CHANGES” .....	17
A. The Asserted Claims Describe a Client that Sends the “Lengthening String” <i>NOT</i> “Only-The-Changes” .....	18
1. <i>The ’024 Patent</i> .....	18
2. <i>The ’628 Patent</i> .....	19
3. <i>The ’073 Patent</i> .....	19

4. <i>The '866 Patent</i> .....	20
B. The MasterObjects Specification <i>Allows</i> But Does Not Require Sending Just-the-Changes.....	21
C. There Is No Disavowal Or Disclaimer Here.....	23
IV. THE ASYNCHRONOUS[LY] TERMS DO NOT REQUIRE THAT THE SERVER BE ABLE TO INITIATE THE COMMUNICATION .....	23
V. CONCLUSION.....	28

**TABLE OF AUTHORITIES**

	<b><u>Page</u></b>
<i>eBay Inc. v. MasterObjects, Inc.</i> , Case IPR2017-00740, Paper 8 (PTAB Jul. 27, 2017) .....	8, 12-13, 16, 21, 23-24
<i>eBay Inc. v. MasterObjects, Inc.</i> , Case IPR2017-00740, Paper 48 (PTAB Jul. 25, 2018).....	8
<i>i4i Ltd. P'ship v. Microsoft Corp.</i> , 598 F.3d 831 (Fed. Cir. 2010).....	22
<i>Kara Tech., Inc. v. Stamps.com, Inc.</i> , 582 F.3d 1341 (Fed. Cir. 2009).....	27
<i>MasterObjects, Inc. v. eBay, Inc.</i> , No. 3:12-cv-00680-JSC, 2013 WL 1287428 (N.D. Cal. Mar. 28, 2013) ....	9-10, 13-15, 22, 24, 26-27
<i>MasterObjects, Inc. v. Google, Inc.</i> , No. 4:11-cv-01054-PJH, 2013 WL 2319087 (N.D. Cal. May 28, 2013).....	10-11, 16
<i>MasterObjects, Inc. v. Yahoo!, Inc.</i> , No. 3:11-cv-02539-JSW, 2013 WL 6185475 (N.D. Cal. Nov. 26, 2013) ...	8, 11-12, 15, 22
<i>Phillips v. AWH Corp.</i> , 415 F.3d 1303 (Fed. Cir. 2005).....	22-23, 27
<i>Teleflex, Inc. v. Ficosa N. Am. Corp.</i> , 299 F.3d 1313 (Fed. Cir. 2002).....	18, 22
<i>Thorner v. Sony Computer Entm't Am. LLC.</i> , 669 F.3d 1362 (Fed. Cir. 2012).....	23, 27

## I. INTRODUCTION AND SUMMARY.

Plaintiff MasterObjects, Inc., (“MasterObjects”) asserts four patents in this case. *See* § II. B. below. All relate to MasterObjects’ invention: a new way to provide fast search content as a user types a search query. For example, if a user were looking for content on “Lady Gaga,” the user could type “la” then “lad” then “lady.” By, say, “lady,” the server could return content on “Lady Gaga.” This function is now known as “instant search,” and it is ubiquitous today.

Over the four patents and forty-four claims MasterObjects now asserts, the parties have just two construction disputes. The first relates to terms new to the patents asserted here (as opposed to terms in earlier patents that were asserted in prior cases), collectively referred to as the “Query Message” terms. The second dispute relates to a term found in all MasterObjects patents, “asynchronous.”

### “Query Message”

The new claims say what a Query Message is: it is a message sent from the client to the server that represents the lengthening string as the user types a search query. *See* § III below. For some of the new claims, sending the full lengthening query is permissive; for other new claims, sending the full lengthening query is required. But there is nothing in any claim that requires the MasterObjects client to send *only* the changes to a query that were not previously sent to the server system (as opposed to the full lengthening query). MasterObjects’ invention is agnostic to the precise mechanics of what the client sends as a query; the points of novelty lay elsewhere.

Notwithstanding the plain claims language, Facebook construes Query Message narrowly as limited to the client sending “just-the-changes” in the search bar. For example, Facebook contends that as a user searches for “Lady Gaga” content, the client must only send “l,” then

“ad,” (if “ad” represented the changes in the search bar after the initial “I” query), then “y,” and so forth. Facebook’s construction requires that the server system receive a series of disjointed characters (“only the changes”), rather than the user’s actual search query, which the server system then glues together to form a coherent search string.

Facebook supports this restrictive construction by quoting several sentences in the MasterObjects Specification describing one permissible implementation in MasterObjects’ detailed description of its preferred embodiment. From its first patent filing forward, MasterObjects described its invention generally, and then illustrated that invention with its example preferred embodiment, which MasterObjects called “QuestObjects.” The Specification is explicit that the baroquey-detailed “QuestObjects” system is a non-limiting embodiment: the Specification says this repeatedly. *See* § II.C & III.B.

For that matter, the language Facebook itself relies on explains that sending “just-the-changes” is one permissible embodiment optimization, but is in no way required. The Specification itself says that the “QuestObjects” system “allow[ed] the Client Quester to send just the changes to the input buffer, instead of sending the entire input buffer.” *See id.* “Allow” means allow. It does not mean require. If my car is allowed to travel faster than 65 MPH, this does not mean that it is always required to travel faster than 65 MPH. The Specification allows sending “just-the-changes,” but does not require sending “just-the-changes.” And this is precisely what two prior courts and the PTAB found. *See* § II.D.

#### Asynchronous/Asynchronously

The claims say that the client and server communicate asynchronously. That is, the server does not have to wait for a complete search query before responding to the client. Instead, the client and server can communicate asynchronously, without each waiting for the other, even

as a user types a search query. This is the difference between a walkie-talkie (“over and out”) and a phone where people can interrupt even as their counter-party speaks.

Despite the plain language, Facebook reads a significant limitation into the “asynchronous” term. It says this term requires a system where the server system must be able to initiate the communication by sending the first message. But that is not what the claims say. *See* § IV below. Nor what the Specification disclosed. *See* §§ II.C. & IV. It is a restrictive construction rejected by every court in every prior MasterObjects case, and by the PTAB in an IPR proceeding. *See* § II.E.

## **II. STATEMENT OF THE FACTS AND PRIOR PROCEEDINGS.**

### **A. Mark Smit and His Invention.**

MasterObjects was founded by Mark Smit, a named inventor on each patent-in-suit. In the spring of 2000, Mr. Smit was a young computer scientist working on data retrieval problems. He found the technology trying and slow. He believed he could do better. In July 2000, Mr. Smit conceived of a new paradigm for searching large data sets, e.g., the Web. He envisioned a system where a client and a server system communicated asynchronously to display instant results, rather than waiting for the user to finish typing and press “enter.” His invention permitted the server system to send to the client search content even as the user typed.

This represented a profound change in search technology. In the old search model, this communication was “synchronous,” *i.e.*, the server system would sit idle until the user hit submit, whereupon the server system would do its work and then return the information to the client. As the client worked, the server system waited; as the server system communicated, the client waited.

To break this “request-response” loop, Mr. Smit realized that the client and server needed to communicate “asynchronously,” *i.e.*, the client and the server system needed to be free to communicate with each other even as a user typed.

Mr. Smit also envisioned that the server system could cache (store) previous queries and search results. With asynchronous communication, such a query and results cache permitted the system to quickly associate a few characters of a new query with a preexisting version of the same query and corresponding content. For example, when a user looks for information on Lady Gaga, the user’s search begins with “la,” which becomes “lad,” then “lady g.” The user then sees search results—the content—for “Lady Gaga.” These inventive techniques provide useful search results much faster than prior systems.

Mr. Smit collaborated with Mr. van den Oord—the other named inventor on patents-in-suit—on invention details and implementation. By no later than November 2000, each asserted claim was conceived. The inventors diligently worked to reduce the invention to practice. MasterObjects filed its first patent application in August 2001; it later issued as U.S. Patent No. 8,112,529 (“’529 Patent”). All other MasterObjects patents descend from the ’529 Patent.

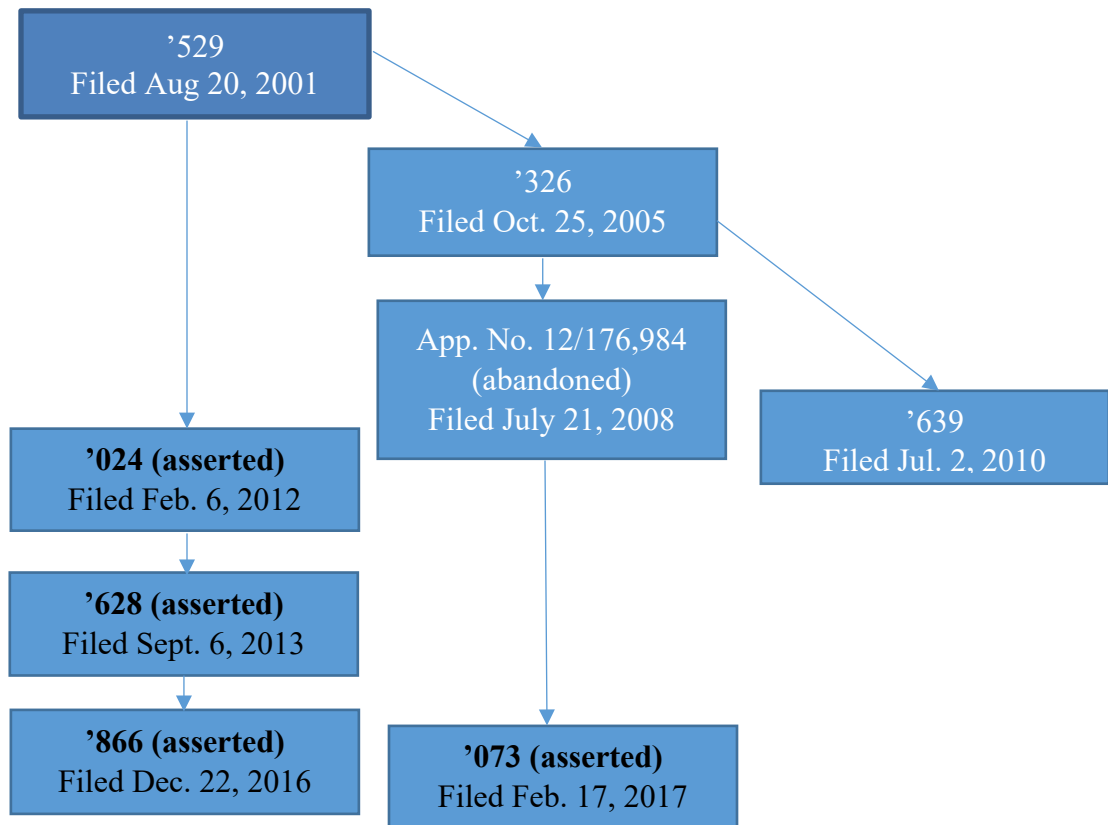
MasterObjects developed and sold a commercial embodiment of the invention, “QuestObjects,” and had customers such as Hewlett-Packard, Siemens, and Princeton University.

#### **B. MasterObjects’ Patents.**

The patents-in-suit are U.S. Patent Nos.: 8,539,024 (the “’024 Patent”); (2) 9,760,628 (the “’628 Patent”); (3) 10,394,866 (the “’866 Patent”); and (4) 10,311,073 (the “’073 Patent”). Of the patents-in-suit, MasterObjects only asserted the ’024 in prior litigation. MasterObjects asserted in prior cases three patents not asserted here: the ’529 Patent, U.S. Patent No. 7,752,326 (the “’326 Patent”), and U.S. Patent No. 8,060,639 (the “’639 Patent”).



As charted below, MasterObjects' patents all descend from the '529 Patent:



See Exs. A ('024), B ('628), C ('866), D ('073), E ('529), F ('326), & G ('639).<sup>1</sup>

The patents-in-suit contain different claims with different claim language compared to the non-asserted patents that were previously construed. To illustrate, Facebook asks this Court to construe phrases containing the term “query messages.” This term was nowhere in the previously construed claim language. And the new claims, on their face, state that “query messages represent the lengthening string” (or contain a similar statement). See § III.A. below.

### C. MasterObjects' Specification.

MasterObjects filed its first application on August 20, 2001. MasterObjects' Specification begins with a general description of the invention: a system that enabled instant

<sup>1</sup> All exhibits are attached to the Declaration of Leslie V. Payne.

search by using “client-server asynchronous” communications to provide to the client search content even as the user typed a lengthening search query. *See, e.g.*, Ex. A at 8:31-37 (“Roughly described, the invention provides a ... client-server asynchronous database search and retrieval system for sending a character-by-character string of data to an intelligent server ... and return to the client increasingly appropriate database information ...”).<sup>2</sup>

The Specification then describes one highly detailed enabling and non-limiting embodiment called the “QuestObjects” system. *See id.* at 9:53-54 (“In the detailed description below, an embodiment of the present invention is referred to as QuestObjects...”). The QuestObjects description begins with a “Glossary” of the many detailed terms used in the non-limiting embodiment, *e.g.*, “Quester,” “Questlet,” “Content Engine,” and the like. *See id.* at 9:59-11:47. These defined terms are thereafter capitalized to show that they represent exemplary features of one embodiment.

As described in the Specification, one possible (but not required) optimization of the QuestObjects system permitted the “Client” to send just a single character at a time as the user typed:

The terms “client” and “server” are used herein to **reflect a specific embodiment** of the invention ... The invention includes a **Server**, that handles requests for information from clients, and a communication protocol that is optimized for sending single characters from a **Client** to the **Server**, and lists of strings from the **Server** to the **Client**.

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<sup>2</sup> All “Specification” cites are to the ’024 Patent. The ’866 Patent is a continuation of the ’628, which is a continuation of the ’024, which is a continuation of the ’529 Patent—accordingly, their specifications are virtually identical. The ’073 Patent is a continuation of an abandoned application, which is a continuation-in-part of the ’326 Patent, which is a continuation-in-part of the ’529 Patent. The ’529 Patent’s specification is incorporated into the ’073’s by reference. *See* Ex. D at 1:25-30. MasterObjects contends that every asserted ’073 claim is entitled to the benefit of the ’529 Patent’s filing date. *See* Ex. N at 3. (The ’639 Patent, not asserted, is a continuation of the ’326, which is a continuation in-part of the ’529 Patent.)

*Id.* at 11:50-61.

The Specification then makes plain that even the QuestObjects embodiment was not restricted to a “single character” protocol:

The system’s protocol is **not restricted** to sending single characters. In fact, Clients can also use the protocol **to send a string of characters**.

*Id.* at 12:5-7.

In a related embodiment-specific permutation, the QuestObjects’ description says that the system can be configured to allow the client to send “just the changes” in the Client input buffer, instead of sending the lengthening string itself:

[T]he protocol of the present invention provides a number of messages that **allow** the **Client Questor** [a defined embodiment specific term] to send just the changes to the input buffer, **instead of sending the entire input buffer**.

*Id.* at 20:14-17. The word allow is permissive, not restrictive. The Specification therefore discloses that the example QuestObjects embodiment **can** send “just-the-changes,” but is **not required** to send “just-the-changes,” *i.e.*, it can send the “entire input buffer” too.

On asynchronous communication, and after the Glossary, the Specification provides that:

The system is bi-directional and **asynchronous**, in that both the **Client** and the **Server** can **initiate communications at any moment in time**. The functionality of the system is such that it can run in parallel with the normal operation of clients. Tasks that clients execute on the system are **non-blocking**, and clients may resume normal operation while the system is performing those tasks. **For example**, a communication initiated by the **Client** may be a single character that is sent to the **Server**, that responds by returning appropriate data. **An example** of a communication initiated by the **Server** is updating the information provided to the client.

*Id.* at 12:24-34. The Specification so describes the system as “non-blocking” and provides several examples of “Client” and “Sever” initiated communications. The Specification later provides that:

This is important because the system is **asynchronous** and **on occasions** it may occur that a **newer QuestObjects Result Set is sent to the client before an older**

**one.** The request identifier and QuestObjects Result Set identifier allow the Client Quester to detect and handle this.

*Id.* at 23:37-41.

As these descriptions make clear, the term asynchronous comports with its ordinary meaning: once a conversation has begun, either side of the system can send a communication, *i.e.*, the client and server system communicate in a “non-blocking” way; one does not have to wait for the other. What the Specification does not do, however, is limit asynchronous communication to situations where the server system must be capable of initiating a communication. Rather, as illustrated by embodiment-specific examples (capitalized terms), asynchronous communication can enable situations where the server system initiates, just as it can enable situations where the client initiates. These are permitted features, but not requirements. Asynchrony is not about who goes first; it is rather about both parties being free to communicate without waiting on the other.

#### **D. Query Message: The Prior Claims Orders and PTAB Proceeding.**

There are three prior constructions of related claims in MasterObjects’ ’529 Patent and its ’639 child.<sup>3</sup> eBay also filed an *inter partes* review (the “IPR”) challenging claims in MasterObjects’ subsequent ’024 Patent, asserted here. The PTAB instituted the IPR on July 27, 2017, and subsequently found all of the challenged ’024 claims valid and patentable in a July 25, 2018 Final Written Decision. *See generally* Exs. I & J.

In various ways, each defendant in the prior cases, and the petitioner in the IPR, sought

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<sup>3</sup> One of these prior constructions also construed ’326 claims. *See* Ex. H. While MasterObjects attaches the docket versions of these orders as exhibits, they are also available on Westlaw. *See MasterObjects, Inc. v. eBay, Inc.*, No. 3:12-cv-00680-JSC, 2013 WL 1287428 (N.D. Cal. Mar. 28, 2013); *MasterObjects, Inc. v. Google, Inc.*, No. 4:11-cv-01054-PJH, 2013 WL 2319087 (N.D. Cal. May 28, 2013); *MasterObjects, Inc. v. Yahoo!, Inc.*, No. 3:11-cv-02539-JSW, 2013 WL 6185475 (N.D. Cal. Nov. 26, 2013).

constructions that limited what the client was permitted to send to the server system.

This dispute resurrects itself here in Facebook’s construction of the new Query Message terms. Facebook argues that a possible preferred embodiment optimization, sending “just-the-changes,” must be read into the claim language as an unwritten claim limitation. Because Facebook’s argument is not new, the three prior claims orders and the PTAB proceeding are probative.

Taking these prior proceedings in the chronological order of the issued opinions:

**1. eBay.**

In February 2012, MasterObjects asserted against eBay the parent ’529 Patent and its child, the ’629 Patent. On March 28, 2013, the Hon. Judge Corley (magistrate judge; N.D. Cal.) issued the *eBay* Court’s Claims Order. *See generally* Ex. K.

The Court first considered whether the “QuestObjects” system was a preferred embodiment (MasterObjects’ position), or a claims limiting description of the invention itself (eBay’s position). The Court agreed with MasterObjects, finding that the QuestObjects system was an embodiment and not claims limiting. *See, e.g., id.* at 6, 12, 16, 17, 19 & 22.

As relevant here, the Court construed the term “communication protocol.” eBay argued that the Specification limited the client to “sending single characters from a client to a server,” citing the “single character” embodiment Specification language quoted above. *Id.* at 11. eBay emphasized that this description began with the words “the invention,” and so concluded that the description limited the claims. *Id.* at 12. MasterObjects disagreed, contending that the QuestObjects system was explicitly just an embodiment, the “present invention” language notwithstanding.

The Court, again, agreed with MasterObjects. The Court found that, while the words “the

invention” in a specification “often evidences an intent to limit the claims to the description,” this was not true in this Specification. *See id.* at 12. On this Specification, the Court found that the patentee had no intent to limit the claims to the QuestObjects embodiment, and held that eBay was improperly importing embodiment details into the claims. *See id.* at 11-14.

## 2. Google.

MasterObjects asserted the ’529 and ’639 patents against Google in a case filed in March 2011. The Court (Hon. Phyllis Hamilton, N.D. Cal.) issued a claims order on May 28, 2013, exactly two months after the prior *eBay* Order. *See generally* Ex. L.

As relevant here, Google argued that the prior claims limited the client to sending “just-the-changes” in the client input buffer, as against sending the entire lengthening string. Ex. L at 15-17. Google said that the language of the prior claims—through entire limitations and groups of limitations Google called the “additional character” terms—suggested a system wherein the client sends “just-the-changes” to the server system, with the server system then gluing these “just-the-changes” queries together to form a lengthening string. *See id.*<sup>4</sup> Google also relied on “just-the-changes” optimization language in the Specification’s QuestObjects description. *See id.* at 17.<sup>5</sup>

The Court agreed with Google, finding that the ’529 claim language required that the

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<sup>4</sup> The following ’529 Claim 1 language is an example of an additional character term construed by the Google Court: “wherein each of the corresponding consecutive queries lengthens the string by the additional characters, to form a lengthening string for retrieving matching content from the server system.”

<sup>5</sup> Facebook’s current lawyers, then at another firm, represented Google in the prior case through claims.

client send “just-the-changes” in the input buffer, as against sending the lengthening query string itself. *Id.* at 16-17 (Finding the claim words “lengthen” and “modify” suggested that the server combined prior queries, while the “additional characters” and “consecutive queries” language suggested that the client send only the changes). The Court thus found that the QuestObjects system was not a preferred embodiment in the context of the ’529 claims, but rather a description of the invention itself. *Id.* at 17.

The Court’s “just-the-changes” limitation ended MasterObjects’ infringement case. MasterObjects stipulated to noninfringement and appealed the Court’s “just-the-changes” construction to the Federal Circuit. The Federal Circuit affirmed with a Federal Circuit Rule 36 Order.<sup>6</sup>

### 3. **Yahoo!**

In May 2011, MasterObjects asserted three patents against Yahoo! (’326, ’639, and ’529). As did eBay, Yahoo! argued that the term “communication protocol” required sending single characters from a client to a server. *See* Ex. H at 8-9.

Just prior to the claims hearing, the Court (Hon. Jeffrey White, N.D. Cal.) issued a “Tentative Rulings and Questions re: Claim Construction” Order. On the single character limitation, the Court tentatively agreed with Yahoo!, saying that the claims described a system “optimized for sending single characters from a client to a server....” In its Tentative Order, the Court asked MasterObjects how the words “the ‘invention’ or ‘present invention’” could describe just an embodiment, as against limiting the scope of the claims. *See* Ex. M at 3.

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<sup>6</sup> Thereafter, MasterObjects asserted the new ’024 Patent, asserted here, against Google. The parties settled, and the ’024 claims were not construed in that litigation.

The parties had a robust argument days later. On November 26, 2013, over a year after the Tentative Order, and post both the *eBay* and *Google* Claims Orders, the Court issued its Final Claims Construction Order. *See generally* Ex. H. Contrary to the Tentative Order, and in accord with Judge Corley’s *eBay* Claims Order, Judge White found that the “QuestObjects” system **was** a preferred embodiment, and so did not cabin the claims. On the “present invention” language, the Court agreed with Judge Corley that, while this language *could* evidence an intent to limit the claims to the description, it did not do so *here*. Instead, relying on the Specification as a whole, the Court found that Yahoo! was reading limitations into the claims. *See id.* at 9:13-10:10.

#### **4. The ’024 Patent and the PTAB Proceeding.**

In January 2017, eBay filed an IPR challenging claims in MasterObjects ’024 Patent (asserted here). As did Google before it, eBay argued that the ’024 term “query message” must be “limited to messages whose search strings consist only of the changes to an input string rather than an entire input string.” *See* Ex. I at 11. As the PTAB summarized:

In other words, if an initial query message comprises an input string of three characters, when a user enters a fourth character to the input string, the new query message must include only the fourth character, i.e., the change, and must exclude the original three characters of the input string.

*Id.* at 11.

eBay did not “identify specific language in any claim to support narrowing the interpretation of ‘query message’ to comprise only changes to an input string.” *Id.* eBay, rather, argued that the claim scope was “limited by the Specification’s description of the invention as sending ‘only the changes.’” *Id.*

The PTAB disagreed:

We are not persuaded by [eBay]’s arguments ... The [*Google*] District Court did not construe the claims “as a whole,” as [eBay] is attempting to do here. Nor did the Court construe the term “query messages,” the term [eBay] identifies in this proceeding. Rather, the Court construed the term “additional characters” in view



of additional claim language, “lengthens” and “modify,” which the Court found to ‘suggest that the server is not wiping its slate clean with each new submitted query, but is instead combining the queries to form the “lengthening string.”

*Id.* at 11-12.

In reaching this conclusion, the PTAB started with the ’024 claim language itself:

Unlike the claims at issue in the ’529 patent, the challenged claims of the ’024 patent do not include the terms ‘additional character,’ or ‘modify,’ both of which suggest sending only a change, and petitioner has not identified specific language in the challenged claims that suggests the server is sending only changes.

*Id.* at 12. On the allowed to send “just-the-changes” Specification language, the PTAB found that this language meant that “the protocol allows for, but is not limited to, sending only changes.” *Id.*

The PTAB found no disavowal. *Id.* “Absent a clear disavowal in the Specification, [the PTAB gave] the term ‘query message’ its ordinary and customary meaning. Nothing in the terms ‘query,’ ‘message,’ or ‘query message’ indicates sending only changes.” *Id.*<sup>7</sup>

#### **E. Asynchronous Communication: The Prior Claims Orders and PTAB Proceeding.**

##### **1. eBay.**

In *eBay*, the defendant argued that “asynchronous connection” means “[a] connection that allows one side of the communication to **initiate** communications at the same time as the other side at any moment in time within a session.” *See* Ex. K at 4 (emphasis added). *eBay* cited the following specification passage to support its construction: “The system is bi-directional and asynchronous, in that both the Client and the Server can initiate communications at any moment in time. ... An example of a communication initiated by the Server is updating the information

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<sup>7</sup> The PTAB did not issue a final ruling on query message, as its final decision, confirming the involved claims’ patentability, turned on independent claim limitations (usability test limitations) that do not use this term. This is unsurprising, since MasterObjects’ invention is agnostic as to the precise manner in which data is transmitted between the client and server system.

provided to the client.” *Id.* at 5 (citing ’529 Patent (Ex. E) at 12:22-36). The same language appears in the specifications of the patents asserted in this lawsuit. *See, e.g.*, Ex. A (’024) at 12:24-34. eBay also cited a passage from the prosecution history in which the applicant stated that an “advantage” of the invention is that “‘both the client and the server can initiate communications at any moment in time’ such that the server ‘can automatically send updated results to the client, without the client user having to click ‘submit.’”” *See* Ex. K at 10.

The Court rejected eBay’s construction, holding that this term means “a connection that allows one side of the communication to communicate at the same time the other side is also communicating within a session.” *Id.* The Court began by analyzing the plain language of the claims, which do not require the server system to initiate communication: “Claim 1 of the ’529 describes the *client* sending the server a lengthening string of characters and the client then receiving *responses* from the server; it does not require the server to initiate any communication. ... In other words, the server is always receiving and responding, but never initiating.” *Id.* at 5 (emphasis in original). The Court held that “the ‘initiate communication’ function is one possible embodiment of the patents rather than a limitation on the claims.” *Id.* at 7. The Court noted that eBay’s “initiate” language appears in a description of “the server and client as utilized in the QuestObjects embodiment rather than [the] server and client in the claims.” *Id.* The Court also cited additional specification passages that show “*one* embodiment of the invention is to have the data pushed, not that the claims *require* the initiation of communications by the server.” *Id.* at 7-8. (citing, *e.g.*, ’529 Patent (Ex. E) at 6:3-11, 8:47-54 & 31:33-45).<sup>8</sup>

The Court then went on to analyze the prosecution history. The Court found that “[t]he inventor is *not* distinguishing the prior art on the ground that with the invention the server can

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<sup>8</sup> Equivalent statements are found at ’024 Patent (Ex. A) 6:11-16, 8:52-59 & 31:38-48.

initiate communication with the client; rather, the inventor is explaining that as a result of the distinguishing feature of the invention—an asynchronous session-based system—the invention *can* have the server initiate communications. Thus, this prosecution history is consistent with the specification’s description of having the server initiate a communication as one possible application of the invention rather than a limitation.” Ex. K at 10. The Court concluded “the ordinary meaning of the language of the claims at issue to one skilled in the art does not include the limitation that the server initiate communications with the client, ... the specification demonstrates that having the server initiate communications with the client is one function that can be enabled with the invention but not a necessary function, and ... the patentee did not narrow ‘asynchronous connection’ during prosecution to require that the server initiate communications with the client.” *Id.* at 10.

## 2. Yahoo!

In *Yahoo!*, the defendant argued that “asynchronous connection” means “a connection that allows either side of the communication to initiate communications at any moment in time within a session.” Ex. H at 6. *Yahoo!* cited the same specification and prosecution history passages as *eBay*. The *Yahoo!* Court applied essentially the same reasoning as the *eBay* Court and came to the same conclusion: “the Court finds the language cited by *Yahoo!* only to refer to a limitation of a specific embodiment, the QuestObjects system. ... MasterObjects does not argue that their invention is distinguishable because the server can initiate a communication with the client. Rather, MasterObjects makes clear that an asynchronous connection *can* have a server initiate communications.” *Id.* at 7-8. Accordingly, the Court construed this term to mean “[a] connection the allows one side of the communication to communicate at the same time the other side is also communicating within a session.” *Id.* at 8.

### 3. Google.

In *Google*, the defendant argued that “asynchronous connection” means “a connection that allows both the client and the server to initiate communications at any moment in time within a session.” Ex. L at 6. The Court adopted Google’s construction, but remarked that “the claimed invention covers both client-initiated and server-initiated communications.” *Id.* at 8. As such, the *Google* Court’s reasoning is consistent with the *eBay* and *Yahoo!* decisions, though its construction is perhaps less clear. The server can initiate the communication, but the claims do not require it to be able to do so. This is also consistent with MasterObjects’ position: the claims do not forbid the server to initiate communication, but they do not require the server to be able to initiate communication either. The term “asynchronous” simply does not place any limitations on who (the client or server) talks first. *See* § IV below.

### 4. PTAB.

This term was also addressed by the PTAB in the IPR. *See* Ex. I at 9-10. There, the parties disputed the meaning of “asynchronous[ly],” but neither side argued that the server is required to initiate the communication. The PTAB made the following remarks:

We find that “bi-directional” refers to communication from both the Client and Server, and that “asynchronous” refers to the capability of initiating communications at any moment in time. In light of this disclosure in the Specification, we determine that the term “asynchronous” encompasses communications that are initiated “at any moment in time.” The Specification also describes as “asynchronous” the situation in which a server receives queries in a particular order, and sends responses to the queries in a different order.

*Id.* at 10. Although the PTAB used the word “initiating” in this description, it did not hold that the server is required to be able to initiate the communication. Rather, the PTAB held that asynchronous communications can be “initiated at any moment in time” without placing any requirements on who initiates the communication, and provided an example in which the client initiates the communication (“a server receives queries”) and the server responds. This holding

is, again, consistent with MasterObjects' proposed construction and inconsistent with Facebook's, which would require the server to be able to initiate. *See* § IV below.

**III. THE QUERY MESSAGE TERMS DO NOT REQUIRE SENDING “JUST-THE-CHANGES.”**

<b>Claim Terms</b>	<b>MasterObjects' Proposal</b>	<b>Facebook's Proposal</b>
“whereby the query messages represent the lengthening string as additional characters are being input” (’024 cls. 1, 32, 35, 36, 37; ’628 cl. 13)	Plain and ordinary meaning.  These terms are not limited to a message/string comprising only the changes to an input string, and may include the entire input string	“Each query consists of only the changes to the input string that were not sent in any previous consecutive query”
“multiple query messages corresponding to multiple versions of said input” (’628 cls. 1, 25)		
“a request message containing a string representing an incomplete version of the search query” (’866 cl. 1)		
“sending a string representing an incomplete search query” (’073 cl. 1)		

On their face, the asserted claims do not restrict what the client sends to “just-the-changes” in the client input buffer. The claim language does not even suggest such a limitation. Rather, for example, the claims specify that the “query messages represent the lengthening string,” or that the “query messages correspond[] to multiple versions of said input.” Read plainly, this language means that the query messages can contain the entire input string, not just the changes.

The asserted claims use different language than the prior ’529 and ’639 Patents. The asserted claims do not say, for example: “wherein each of the plurality of queries form an increasingly lengthening query string for retrieving content from the server; and wherein the server receives the plurality of queries from the requesting client, and in response to receiving

each of one or more additional characters in the increasingly lengthening query string.” *See* Ex. G (’639), Claim 1; *see also* Ex. Q (table showing non-asserted ’529 Claim 1’s language alongside asserted ’024 Claim’s language). Instead, the asserted claims refer to “query messages,” “a request message,” or “a string.”

Nor does the Specification support reading a “just-the-changes” limitation into the claims. In fact, as Judges Corley and White (as well as three PTAB judges) concluded, *see* § II.D, the Specification is **directly** to the contrary. Saying that one possible optimization of the QuestObjects embodiment would “allow” sending just the changes “**instead** of sending the full input buffer,” supports doing either, not limiting to one.

Given these points, Facebook can support its restrictive “just-the-changes” construction only by proving manifest and clear disavowal of sending more than “just-the-changes.” This disavowal does **not** exist. No Court, nor the PTAB, found such a disavowal.

**A. The Asserted Claims Describe a Client that Sends the “Lengthening String” NOT “Only-The-Changes.”**

Claim construction begins “with the words of the claim[s].” *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1324 (Fed. Cir. 2002); *see also id.* (“[T]he claim construction inquiry . . . begins and ends in all cases with the actual words of the claim”).

**1. The ’024 Patent.**

In pertinent part, independent claim 1 of the ’024 Patent describes the query message as follows:

[A] server system...configured to receive query messages from a client object...the client object that, while a user is providing **input comprising a lengthening string of characters**, sends query messages to the server-system; whereby **the query messages represent the lengthening string** as additional characters are being input by the user...

*See* Ex. A, Claim 1.

This claim says that the “query messages represent the lengthening string” that is being input by the user. This language cannot be read to mean that the query message must be restricted to only the changes in the input buffer. On its face, “represent the lengthening string” can include the entire string.

All other '024 claims are congruent with independent claim 1. All describe the query message as the lengthening string.

## 2. The '628 Patent.

In pertinent part, independent claim 1 of MasterObjects' '628 patent states as follows:

[A] client object adapted to **receive input comprising a lengthening string of characters** from a user, the client object sending **multiple query messages corresponding to multiple versions of said input** to a server system...

*See* Ex. B, Claim 1.

This claim says that the client object receives “input comprising a lengthening string of characters,” and that the client object then sends query messages “corresponding to multiple versions” of this input. The client object thus can receive and then send “versions” of the lengthening string to query a server. For example, if a user is typing “Lady Gaga,” the strings “l,” “la,” and “lad” correspond to multiple versions of the input over time. The plain meaning of this language is not limited to sending only the changes.

## 3. The '073 Patent.

In pertinent part, MasterObjects' '073 independent claim 1 reads as follows:

A method comprising...automatically **sending a string representing an incomplete search query** to a server system comprising one or more computers; **receiving** by the server system, **the string; matching** by the server system, **the string** to entries in a cache of query strings...

*See* Ex. D, Claim 1.

This claim states that the “string” sent represents the “incomplete search query.” The

claim then states that the server system looks for content by “matching” “the string.” If the query being sent is the query being “matched,” then the query sent **has** to include the entire current input string. If the string were just the changes to the input buffer, then the server system could not “match” this string. The server would have to glue the “just-the-changes” queries together to form a coherent string to search for content. For example, if the user extended the input from “l” to “la,” and the client sent only the change, “a,” the server system would have to append “a” to “l,” so that it could use “la” to search for content (such as Lady Gaga). In this glue together reading, the server system would not be “matching” the string sent (“a”) to entries in the cache. The claim language, perforce, dictates that what is sent **cannot** be only the changes. (Claim 1 is the ’073’s only independent claim).

#### 4. The ’866 Patent.

MasterObjects’ ’866 independent claim 1 similarly describes the server system **matching** the contents of the return message, “the string,” to entries in the cache to find content matching the return message’s string:

A method comprising...sending a **request message containing a string representing an incomplete version of the search query** over a network to a server system comprising one or more computers serving a plurality of client computers, **receiving, by the server system, the string; matching by the server system, the string to entries in a cache of queries and search results** previously retrieved from one or more content sources; retrieving by the server system, data indicative of the **search results matching the incomplete version of the search query...**

*See* Ex. C, Claim 1.

Since the server system is searching content by “matching” server system content against the “string” received, that string **must** be the incomplete query. (The ’866’s other independent claim features similar language.)

There is nothing in the language of the asserted claims that says a Query Message must



be restricted to just-the-changes in the client input buffer. There is nothing in the asserted claim language that even suggests such a limitation, and the plain language of the '073 and '866 claims outright exclude sending only the changes.

**B. The MasterObjects Specification Allows But Does Not Require Sending Just-the-Changes.**

The parties' Query Message construction dispute reduces to one point: whether the QuestObjects system described in great detail is a preferred embodiment or a claim limiting description of the invention itself. MasterObjects says the former; Facebook contends the latter.

The QuestObjects system is just an embodiment. This is what the Specification itself says: "In the detailed description below, an embodiment of the of the present invention is referred to as QuestObjects." Ex. A at 9:53-54. The Glossary of defined terms is embodiment specific. *See id.* at 9:59-60 ("Other terms used to describe the QuestObjects system in detail can be found in the glossary below"). The just-the-changes allowed optimization is one possible embodiment specific approach, not a binding claims limitation. Take for example the following passage:

If the results are not found in the cache, the **Client Quester** uses the **Client Controller** to send the new input buffer to the **Server Quester**, so that a new query can be executed...To support this, the protocol of the present invention provides a number of messages that allow the **Client Quester** to send just the changes to the input buffer, instead of sending the entire input buffer...

Ex. A at 20:11-17 (emphasis added).

First, it is clear that this description is embodiment specific. It uses capitalized QuestObjects' Glossary defined terms. Second, the words "allow" and "instead" are important. These words make clear that, in one optimization, the preferred embodiment **may** send just the changes "instead of the entire input buffer." *See* Ex. I (PTAB) at 12 ("'[T]hat allow' indicates the protocol allows for, but is not limited to, sending only changes"). That the embodiment is

allowed to send just-the-changes in no way means the claims are limited to sending just-the-changes.

The Specification also contains a passage that says: “The invention includes a **Server**, that handles requests for information from clients, and a communication protocol that is *optimized for sending single characters* from a **Client** to the **Server**,” Ex. A. at 11:57-61. This passage too is embodiment specific, as the capitalized terms “Server” and “Client” are so defined. *See id.* 11:51-52 (“The terms ‘client’ and ‘server’ are used herein to reflect a specific embodiment of the invention”); *see also* Ex. K (*eBay*) at 13 (“[S]erver and client are capitalized to further indicate that the inventor is describing a specific embodiment rather than the limitations of the claimed inventions”); Ex. H (*Yahoo!*) at 9-10. More, an optimization is a potential upgrade, not a required feature.

Embodiment specific and permissive specification language does not limit the scope of the claims. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1323 (Fed. Cir. 2005) (“[A]lthough the specification often describes very specific embodiments ... we have repeatedly warned against confining the claims to those embodiments”); *Teleflex*, 299 F.3d at 1326-27 (holding that there is *no* rule that where one embodiment is described in the specification the embodiment’s limitations are to be read into the claims); *i4i Ltd. P’ship v. Microsoft Corp.*, 598 F.3d 831, 844 (Fed. Cir. 2010) (“The specification’s permissive language ... does not clearly disclaim ....”)

Finally, the Specification has an explicit illustration of a “query message” being “AB,” where A was typed first and sent and B was typed second, with “AB” then sent. *See* Ex. A at 18:64-19:2 (“An additional character event is generated when the user has typed the second character ‘b’ ... the Server Quester may ... send the appropriate query message ‘ab’ to the Service”). This is the only time the exact phrase “query message” appears in the ’024, ’628,

'866, and '529 Patents' specifications. This "AB" query comprises both character A and newly-added character B. In this way, the Specification describes the entire extant string as a query message, not "only-the-changes" to the lengthening string. This Specification reference, which uses the exact words used in two of the Query Messages terms, cannot be ignored. *See* Ex. I (PTAB) at 13 ("The term 'query message' appears only once ... and describes a query sent from the server to the service ... The claims ... use the term ... to refer to queries sent from a client object ... Nonetheless, the Specification uses the term 'query message' in reference to a message comprising an entire input string, not just changes to a string").

**C. There Is No Disavowal Or Disclaimer Here.**

The words of a claim are generally given their ordinary meaning. *See Phillips*, 415 F.3d at 1312. There are two important exceptions to this general rule: (1) where the patent owner sets out a definition and so acts as lexicographer, or (2) where the patentee "disavows the full scope of a claim term either in the specification or prosecution." *See Thorner v. Sony Computer Entm't Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012). Disavowal must be clear and manifest. *Id.* at 1366 ("[E]xpressions of manifest exclusion or restriction" required for disavowal).

As illustrated above, *see* § III.B, there is no disavowal of the scope of these claim terms in the Specification. There is also absolutely no prosecution history disclaimer or disavowal. The PTO never disallowed claims because the client sent the entire lengthening string, as against "just-the-changes." There is no MasterObjects reply where the patentee said, directly or indirectly, that one of its points of novelty lay in sending "just-the-changes."

**IV. THE ASYNCHRONOUS[LY] TERMS DO NOT REQUIRE THAT THE SERVER BE ABLE TO INITIATE THE COMMUNICATION.**

Term	MasterObjects' Proposal	Facebook's Proposal
"asynchronously" ( '024 cls. 1, 35,	Plain and ordinary meaning.	"Both the client and the server can <b>initiate</b> communications at any

36, 37; '628 cls. 1, 13, 25; '073 cl. 1; '866 cl. 1)	Alternatively: "each side of the communication is free to communicate without waiting for the other side"	moment in time"
"asynchronous" ( '024 cl. 32)	Alternatively: "each side of the communication can communicate with the other side in a non- blocking manner"	

Facebook contends that the terms "asynchronous" and "asynchronously" impose a limitation that requires the server to be able to "initiate" (*i.e.* start or begin) the communication. MasterObjects respectfully disagrees. The "asynchronous" terms are not about who starts the communication. Rather, the "asynchronous" terms describe how the communication is conducted once it has begun. Synchronous communication is like a walkie-talkie—each side takes turns, waiting for the other side to say "over" before beginning to speak. Conversely, asynchronous communication is non-blocking—each side can communicate without waiting for the other side to finish. *See, e.g.,* Ex. K (*eBay* Order) at 4 (an asynchronous connection "must allow one side of the communication to communicate with the other side at the same time, that is, like telephones rather than walkie talkies").

MasterObjects' construction is supported by the intrinsic and extrinsic evidence. The claims describe a situation in which "the client object...sends query messages to the server system" and then "the server system...send[s] return messages to the client object." *See, e.g.,* Ex. A ( '024), Claim 1. These claims do not require the client or server system to wait its turn; each is free to send messages on its own timetable. The claims also do not require the messages to be sent or received in any particular order. *See* Ex. I (PTAB) at 10 ("'[A]synchronous' also encompasses communications that are initiated 'out of order'"). As such, some claims say "the client object tests the usability of the results in the return message by checking that the return message corresponds to the latest query" to ensure that the client does not display out-of-date

results to the user. *See, e.g.*, Ex. A ('024), Claim 1. The impetus for this usability test is the asynchronous nature of the communication, in which both sides are free to communicate without waiting for the other side.

The Specification describes examples of this asynchronous process in more detail. “Tasks that clients execute on the system are non-blocking ... a communication initiated by the Client may be a single character that is sent to the Server, that responds by returning appropriate data. ... As information changes in the database, the Server sends an updated version of that information to the Client.” *See, e.g.*, Ex. A ('024) at 12:28-38; *see also id.* at 23:37-41 (“[T]he system is asynchronous and on occasions it may occur that a newer QuestObjects Result Set is sent to the client before an older one. The request identifier and QuestObjects Result Set identifier allow the Client Quester to detect and handle this”).

That this is the ordinary meaning of “asynchronous” to one skilled in the art is further supported by extrinsic definitions in technical dictionaries:

- Asynchronous *adj.*: “Pertaining to, being, or characteristic of something that is not dependent on timing. For example, asynchronous communications can start and stop at any time instead of having to match the timing governed by a clock.” Ex. O (Microsoft Computer Dictionary (5th ed. 2002)).
- Asynchronous communications *n.*: “Computer-to-computer communications in which the sending and receiving computers do not rely on timing as a means of determining where transmissions begin and end.” *Id.*
- Asynchronous: “To communicate without external timing and to have each communicating device work at its own speed. People talk asynchronously. Even though one person talks very fast and another very slowly, their brains still receive the conveyed messages and

respond. Modems and FAX machines are asynchronous.” Ex. P (McGraw-Hill Illustrated Telecom Dictionary (1998)).

None of these definitions supports Facebook’s proposed construction. They show that “asynchronous” has nothing to do with who initiated the communication by sending the first message. Rather, a communication is “asynchronous” if both sides are free to talk without relying on a clock or other coordination mechanism to synchronize their communications with one another.

The same claim construction dispute has been litigated in three prior cases. *See* § II.E. above. In each prior case, the defendant took the same position Facebook now takes, proposing a construction that required the server to be able to “initiate” the communication. In two of those three cases, the Court expressly rejected the defendant’s proposed construction. In the third case, the Court accepted the defendant’s construction, but did not limit the claims to require the server to be able to initiate communications (as Facebook now proposes), but rather held that the claims were broad enough to allow server-initiated communications (this is consistent with MasterObjects’ construction).

In the *eBay* case, Judge Corley rejected eBay’s proposal that “asynchronous connection” means “[a] connection that allows one side of the communication to initiate communications at the same time as the other side at any moment in time within a session.” Ex. K at 4. The *eBay* Court:

- Began its analysis with the plain language of the claims, observing that none of the claims state or imply that the server sends the first message, *id.* at 5;
- Then turned to the specification and held that “the ‘initiate communication’ function is one possible embodiment of the patents rather than a limitation on the claims,” *id.* at 7;

- Then turned to the prosecution history where it found that the history was “consistent with the specification’s description of having the server initiate a communication as one possible application of the invention rather than a limitation,” *id.* at 10; and
- Then concluded that “the ordinary meaning of the language of the claims ... does not include the limitation that the server initiate communications with the client ....” *Id.* at 10.

The same reasoning is equally applicable to all the claims at issue here. For example, ’024 Claim 1 says “the client object...sends query messages to the server system” and “the server system...send[s] return messages to the client object.” Ex. A. All of the claims that use the term “asynchronous” or “asynchronously” are the same in this respect. All describe the client initiating the communication, and none require the server to initiate any communication. *See* Ex. A (’024), Claims 1, 32, 35, 36, 37; Ex. B (’628) Claims 1, 13, 25; Ex. D (’073) Claim 1; Ex. C (’866) Claim 1. The fact that some embodiments may allow the server to initiate communication does not limit the ordinary meaning of these claims. *See, e.g., Kara Tech., Inc. v. Stamps.com, Inc.*, 582 F.3d 1341, 1348 (Fed. Cir. 2009) (“The patentee is entitled to the full scope of his claims, and we will not limit him to his preferred embodiment”); *Phillips*, 415 F.3d at 1323.

Further, nothing in the specifications or the prosecution history is a disavowal. *See, e.g.*, Ex. A (’024) at 12:24-34 (which is identical to a ’529 passage the *eBay* Court found non-limiting. *See* Ex. K at 5-9). There are no “expressions of manifest exclusion or restriction” that would give rise to a disclaimer or express definition, and as such MasterObjects “is entitled to the full scope of its claim language.” *See Thorner*, 669 F.3d at 1366; *see also* Ex. K (*eBay*) at 9 (“The Court does not find an unambiguous disavowal”).

In sum, all the claims at issue describe the client as initiating the communication, and

none of these claims state or imply that the server must initiate the communication. As described in certain embodiments in the specification and prosecution history, the server system is permitted to initiate communication, but it is never required to do so. As such, these embodiments do not limit or narrow the claims to require the server system to be capable of initiating communication. Facebook's construction, which is designed to import such a requirement into the claims, should therefore be rejected.

## V. CONCLUSION.

For the foregoing reasons, MasterObjects respectfully request that the Court enter MasterObjects' proposed constructions.

Dated: September 18, 2020

Respectfully submitted,

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**CERTIFICATE OF SERVICE**

I hereby certify that all counsel of record, who are deemed to have consented to electronic service are being served this 18th day of September, 2020, with a copy of this document via the Court's CM/ECF system.

/s/ Leslie V. Payne  
Leslie V. Payne